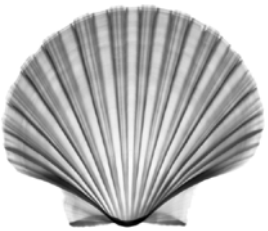
Installation guide for

SIERRA™ *plus* film digitizers

- Single film
- Multi-film



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This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area can cause harmful interference, in which case the user will be required to correct the interference at his or her own expense.

Product compliance testing was conducted using VIDAR shielded cables. Modifications to VIDAR shielded cables or the use of cables other than those available from VIDAR could void the user's authority to operate the equipment.

Caution: No operator-serviceable parts inside. Refer servicing to qualified personnel.

Achtung: Gehäuse nicht öffnen. Wartung uno reparatur nur durch eletrofachkräfte.

Attention: Aucune piece ne peut etre remplacee par l'utilisateur. Toute operation de maintenance doit etre effectuee par une personne qualiee.

Atencion: Acceso interno solo autorizado a personal tecnico cualificado.

Attenzione: Non appire. Rivolgersi a personale qualificado.

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The Image of Reliability

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Unpacking

the SIERRA™ *plus* film digitizer

In this chapter, you will:

- Unpack and inspect the digitizer's parts.
- Identify the digitizer's parts.

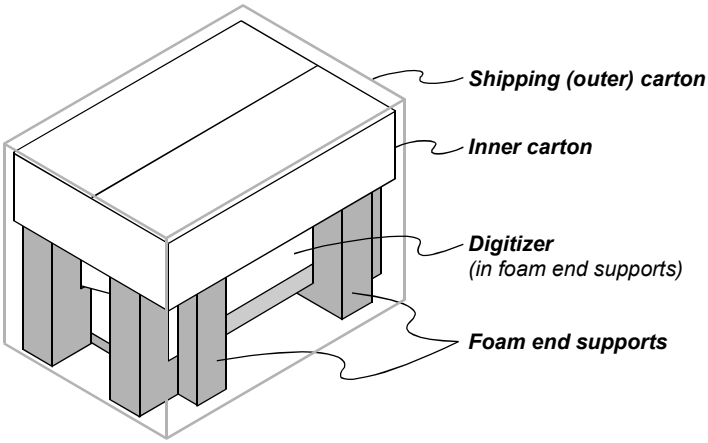
1. Look for damage.

Before unpacking the SIERRA™ *plus* film digitizer, examine the shipping carton for damage.

If the carton is damaged, **notify the shipper immediately**.

> **IMPORTANT:** Save the outer carton, inner carton, cardboard separators, foam end supports and cardboard shutter-lock. If you need to ship the digitizer later, you should repack it in the original materials as shown below.

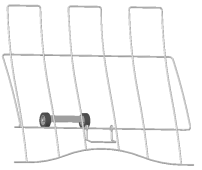
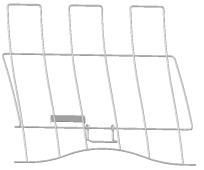
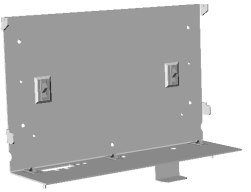
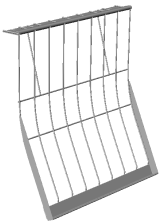
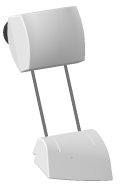
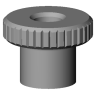
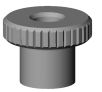
What's inside the shipping carton?



2. Unpack the inner carton.

Remove the inner carton from the outer shipping carton and open it. Check carefully to assure you received the items listed below.

Standard items

✓	**Description** (**Note:** items are not shown to same scale.)	
☐	Entrance tray assembly (Multi-film **or** single film)	 Multi-film  Single film
☐	Mounting bracket assembly	
☐	Exit tray	
☐	Entrance tray film guide assembly	
☐	Thumb nut (2)	 

continued

✓	**Description** (**Note:** items are not shown to same scale.)
☐	Film damper assembly
☐	Power Supply
☐	Electrical power cord; either U.S. medical power cord, or Euro-style power cord
☐	SCSI box (Adaptec 2930 SCSI card and software)
☐	Switch adjusting tool
✓	*Quick start guide* card
☐	Mini SCSI to mini SCSI cable

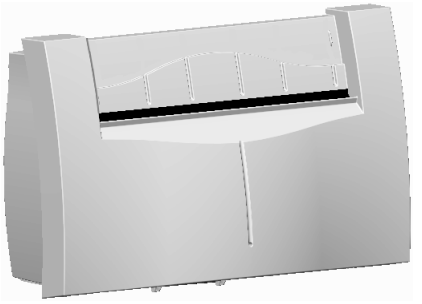
Optional items

✓	**Description**
☐	Third-party software instructions

Note: If you plan to use the table-top stand, you will identify its parts later, in the “Table-top stand” chapter.

3. Unpack the film digitizer.

a. Carefully lift the film digitizer from the shipping carton, remove the plastic wrapping and then the foam end-supports.

✓	Description	
☐	SIERRA™ *plus* film digitizer	

b. Remove the cardboard shutter-lock from the scanner.

4. If anything is missing...

Immediately contact your VIDAR supplier.

5. Activate your product warranty.

Complete the warranty information/customer survey form at the back of this manual and mail it to VIDAR Systems Corp.

If your digitizer needs service, this information should be on file at VIDAR.

Contact VIDAR Technical Support if you have any questions about installing or using your VIDAR film digitizer:

Phone: 1-888-INFO-471 (1-888-463-6471)

+1-703-471-7070 outside the U.S.

E-mail: medtech@vidar.com

NEXT: Configure the SCSI settings ⇨

Configuring SCSI settings

for the SIERRA™ *plus* film digitizer

In this chapter, you will:
- Set the digitizer's SCSI ID number.
- If necessary, activate the digitizer's SCSI termination.
- Record important information about the digitizer.

1. Set the digitizer's SCSI ID

A computer equipped with a SCSI bus can communicate with multiple SCSI devices (for example: a film digitizer, a scanner and a disk drive). Each device must have a unique SCSI ID number so the computer can distinguish it from other SCSI devices. Valid SCSI ID numbers range from 0 to 7.

When selecting SCSI ID numbers:

- The SCSI Card 2930U is preset to SCSI ID 7 and should not be changed.

- Set the film digitizer to any SCSI ID between 0 and 6, as long as that number is not used by another SCSI device attached to the computer.

  Note: The SIERRA™ *plus* is shipped from VIDAR with the SCSI ID preset to 5.

- If the system is configured to boot from a SCSI disk drive, it's best to set the disk's SCSI ID to 0 or 1. Most SCSI disks are preset to SCSI ID 0 at the factory.

continued

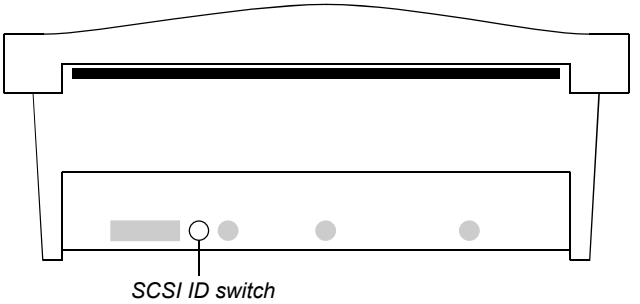
CAUTION: The digitizer and computer MUST be turned off before changing the SCSI ID.

To set the digitizer's SCSI ID:

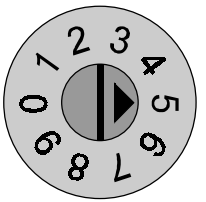
a. Locate the switch adjusting tool.

b. Lay the digitizer on its back, with its bottom surface toward you.

c. Locate the SCSI ID switch.



d. Use the tool's **flat** tip to rotate the SCSI ID switch to the desired SCSI ID number.



Note: Do not set the switch to position **8** or **9**, as these are **not valid** SCSI ID numbers.

2. Set the digitizer's SCSI termination.

The SIERRA™ *plus* is configured to be placed at the end of the SCSI chain. The SCSI termination switch is on (termination activated).

Note: VIDAR recommends that the Adaptec 2930CU SCSI controller be used **only** for the digitizer. Do not connect internal disk drives to the SCSI controller.

Note: VIDAR *does not recommend* daisy-chaining multiple SCSI devices with the film digitizer. If you are considering using the digitizer in daisy-chain configurations, please first contact VIDAR Technical Support (medtech@vidar.com).

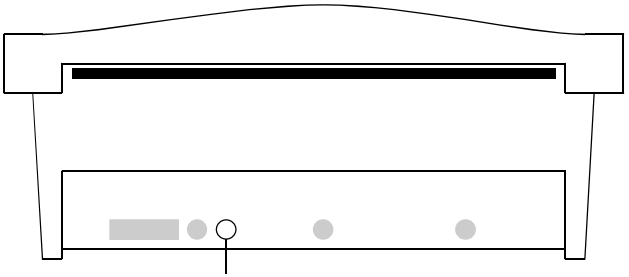
continued

To change the digitizer's SCSI termination:

> **Note:** The SIERRA™ *plus* is shipped from VIDAR with the SCSI termination switch set to **internal termination on**.

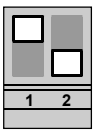
a. Lay the digitizer on its back, with its bottom surface toward you.

b. Locate the SCSI termination switches on the bottom of the digitizer.

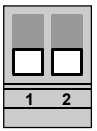


c. To deactivate SCSI termination, slide Switch 1 to position shown using the **flat** tip of the switch-adjusting tool.

   (Switch 2 has no function.)



Switch 1 set for internal termination



*Switch 1 set for **no** internal termination*

3. Record important information.

Note: You must record this information now. After you mount the digitizer, you will not be able to read the serial number and it will be difficult to see the SCSI switches.

a. Locate the "Warranty information and customer survey" form at the back of this manual.

b. In the "System configuration" section, under "Hardware," find the "Digitizer" section.

c. In the "Digitizer" section, record this information:
   - Digitizer serial number.
   - SCSI ID.
   - SCSI termination (on/off).

NEXT: Mount the digitizer on the table-top stand ⇨

or

Mount the digitizer on a wall ⇨

Table-top stand

for the SIERRA™ *plus* film digitizer

The table-top stand is for use in situations where the SIERRA™ *plus* film digitizer cannot be mounted on a wall. The stand was designed to be placed on a table, desk or countertop up to 36" (91cm) high.

SAFETY WARNING

Never place the SIERRA™ *plus* with table-top stand on the floor.

In brief, to assemble the SIERRA™ *plus* film digitizer with the table-top stand you will:

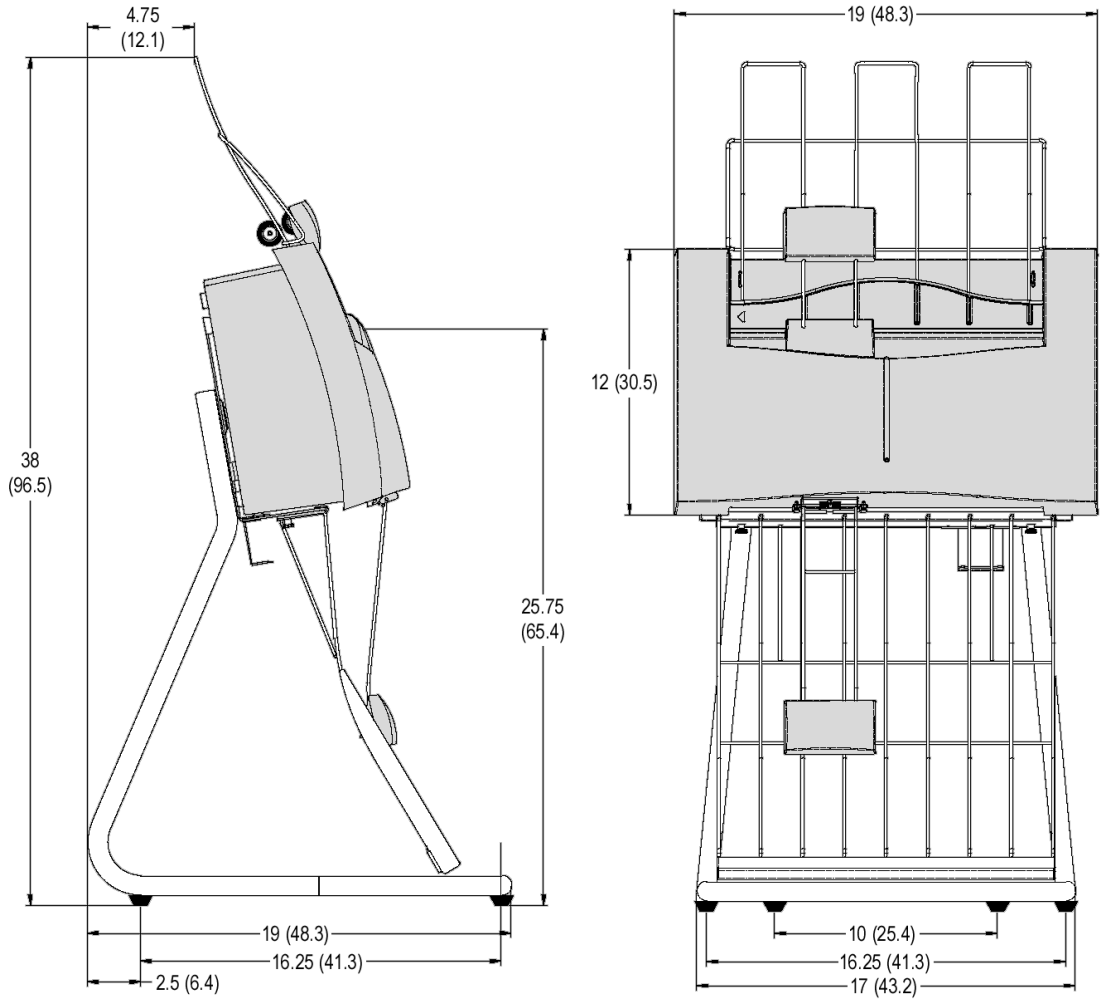
- Assemble the stand and mounting bracket.
- Install the digitizer on the mounting bracket.
- Place the stand-mounted digitizer in a suitable working location.
- Attach power and SCSI cables.
- Install the exit tray, film damper, entrance tray and film feed assembly (multi-film only).

Instructions are provided in this chapter.

Before you start...

Be sure you have already set the SCSI ID and SCSI termination switches (see the "Configuring SCSI settings" chapter, earlier in this manual). It's easier to see and set these switches before the digitizer is attached to the table-top stand.

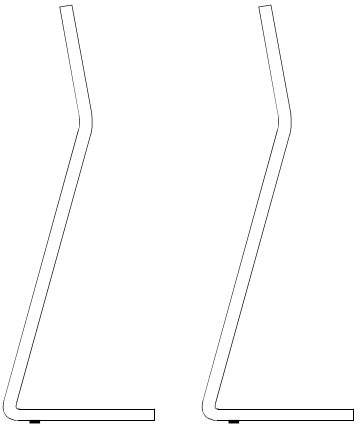
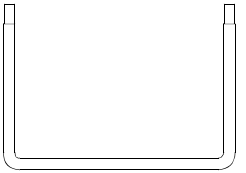
Dimensions with table-top stand



Dimensions are in inches (dimensions in parentheses are in centimeters)

1. Identify the parts.

Identify these items:

✓	Description	
☐	Two leg tubes	
☐	"U" tube	
☐	Six 8-32 x 3/8" screws	

2. Assemble the stand and mounting bracket.

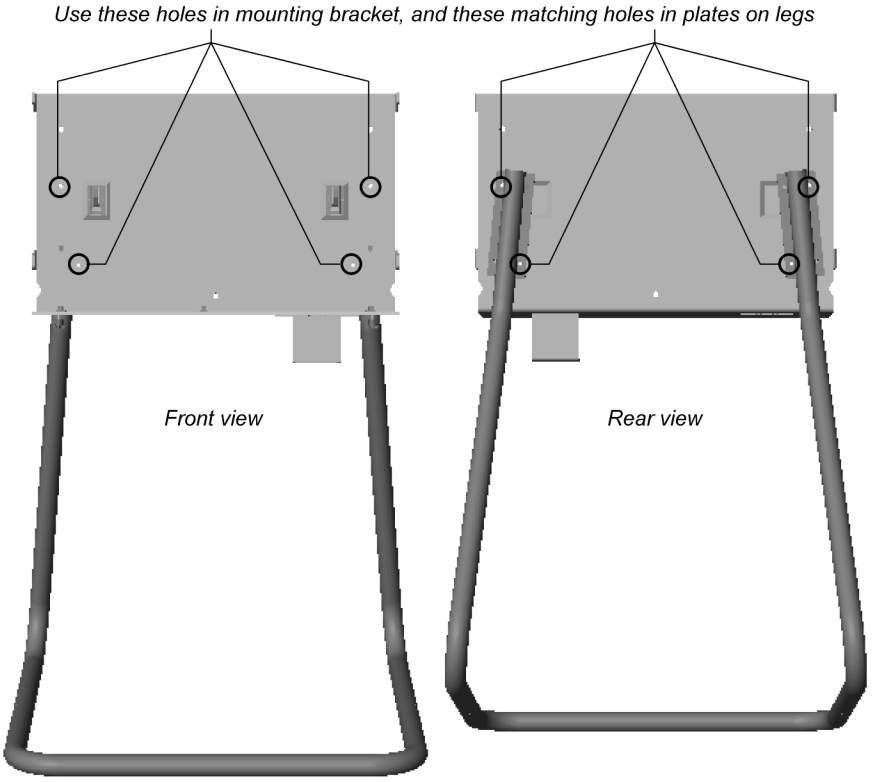
Tip: It's easiest to assemble the mounting bracket to the stand while the stand is on its back, as shown on the next page.

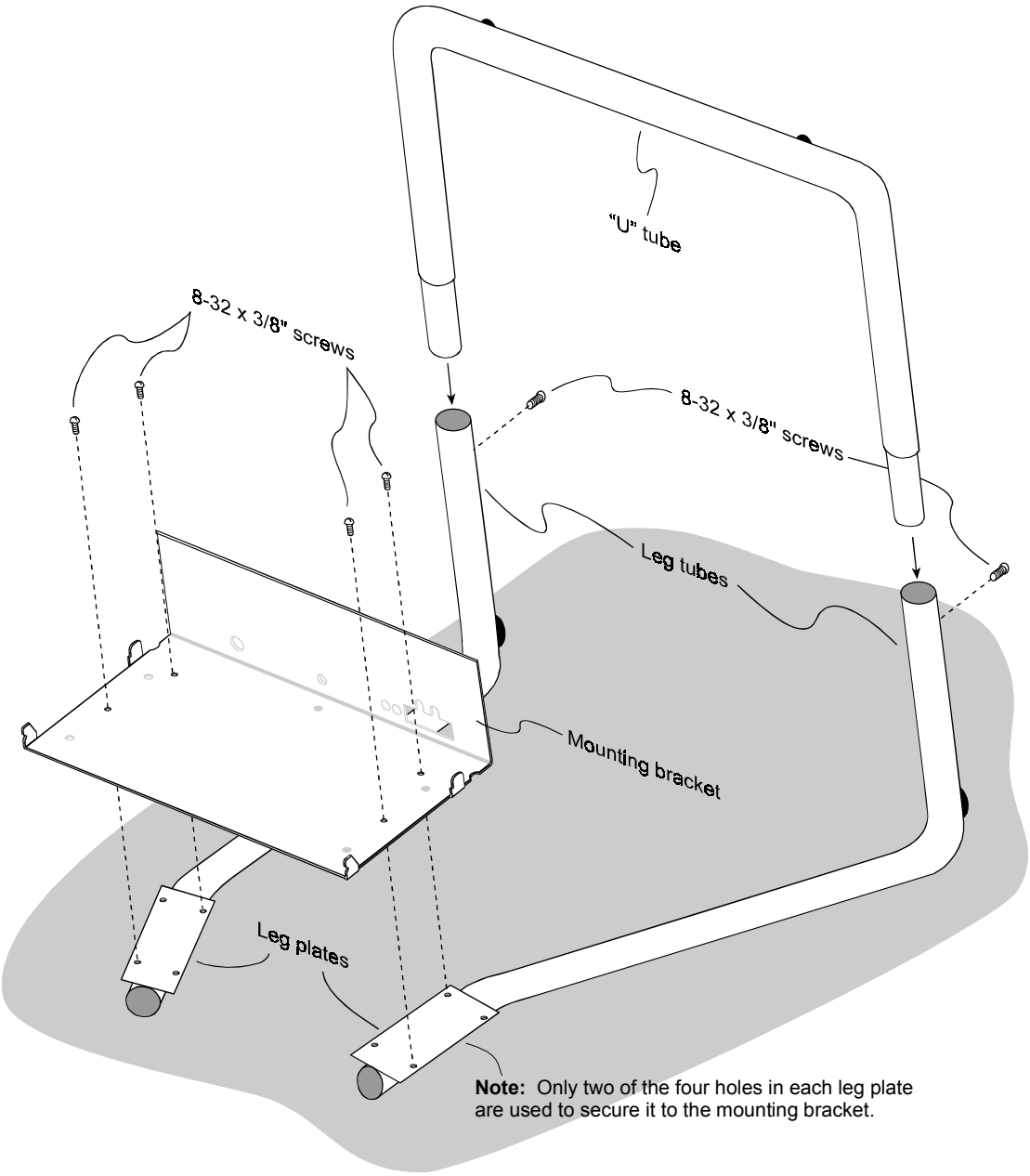
a. Insert the "U" tube into both leg tubes. All rubber feet should be on the same side (see next page). Secure the "U" tube with two 8-32 x 3/8" screws. Do not tighten the screws yet.

b. Secure the mounting bracket to the plates on the legs with four 8-32 x 3/8" screws. The diagram below shows which holes to use.

c. Tighten all screws.

d. Place the stand on its feet.




"U" tube
8-32 x 3/8" screws
8-32 x 3/8" screws
Leg tubes
Mounting bracket
Leg plates
Note: Only two of the four holes in each leg plate are used to secure it to the mounting bracket.

3. Mount the digitizer.

a. Locate the four mounting slots on the back of the digitizer. These slots match the four tabs on the mounting bracket.

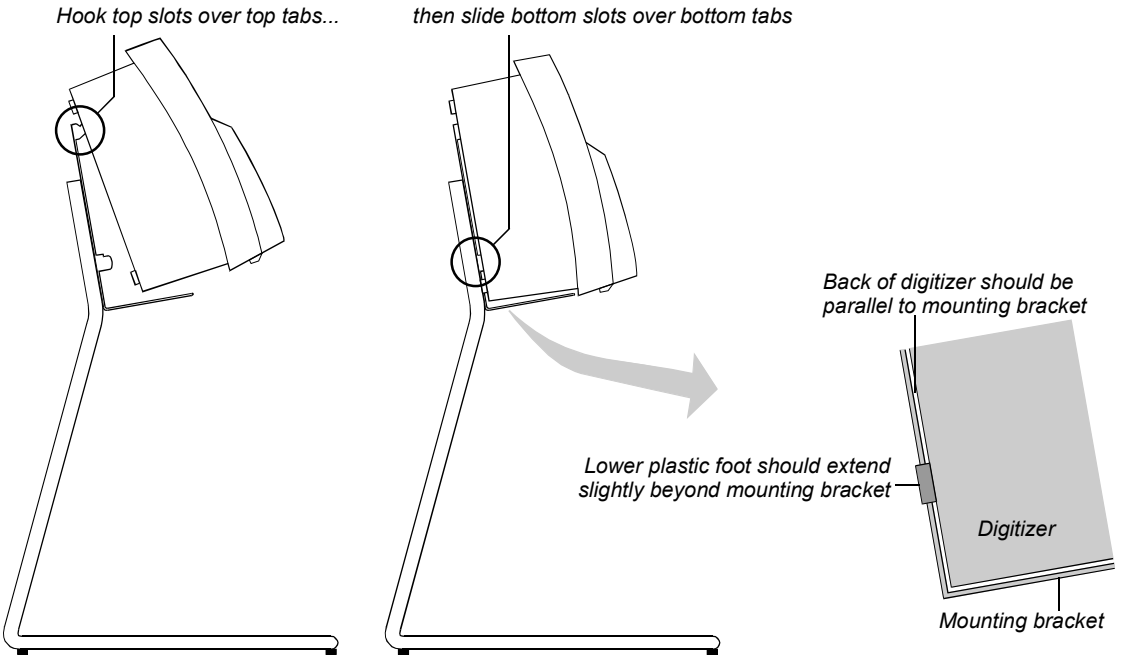
b. Position the digitizer so its front is facing you (VIDAR logo is visible).

c. Grasp the digitizer by its sides.

d. Slide the digitizer's upper mounting slots over the upper tabs on the mounting bracket (as shown below left). Assure that the slots drop into the notches in the tabs.

e. Rotate the bottom of the digitizer toward the mounting bracket, so the bottom mounting slots slide over the bottom tabs on the mounting bracket (as shown below center).

Note: When the digitizer is properly mounted, its rear panel is in full contact with the grounding tabs on the bracket.


Hook top slots over top tabs...
then slide bottom slots over bottom tabs
Back of digitizer should be parallel to mounting bracket
Lower plastic foot should extend slightly beyond mounting bracket
Digitizer
Mounting bracket

4. Route and connect the power cable.

a. Locate the power supply. Identify the power cable (permanently attached to the power supply) and the power connector at its end.

> **WARNING:** Do not connect the AC power cord at this time.

b. About 10 inches (25cm) from the end of the power cable form a partial loop (see below left).

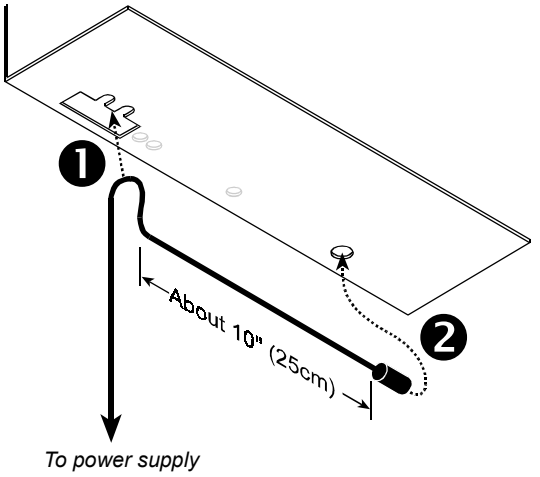
c. Insert the loop into the rectangular hole in the bottom of the mounting bracket, and slide it into the cutouts toward the front (below, left, #1).

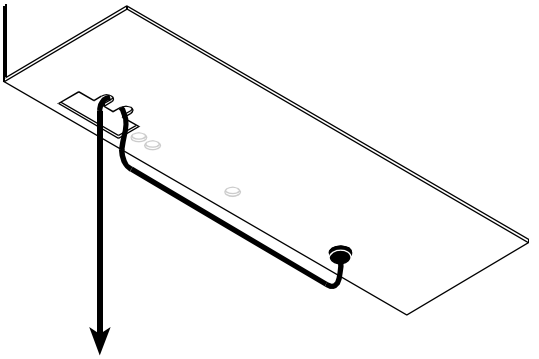
> **Note:** Make sure the power cable is clear of the rectangular hole and doesn't block the SCSI connector.

d. Plug the end of the power cable into the jack near the right end of the mounting bracket (below, left, #2).

> **IMPORTANT:** Never force the power connector. If you have difficulty attaching the power connector, assure that the digitizer's power jack is aligned with the mounting bracket hole.

For clarity, the digitizer and other details have been omitted from these figures



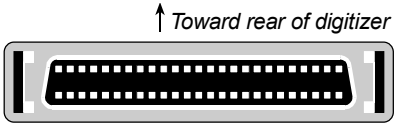


5. Connect the SCSI cable.

Note: Before connecting the SCSI cable, be certain that the SCSI cable isn't connected to anything else and the digitizer power supply is unplugged.

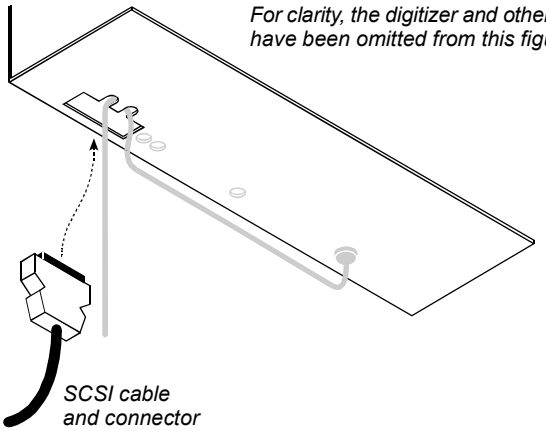
a. Locate the SCSI cable.

b. Orient the SCSI connector as shown here. ➔



c. **Carefully** attach the SCSI connector to the digitizer's SCSI port connector (located inside the rectangular hole in the mounting bracket). Apply even pressure to avoid bending SCSI connector pins. **Do not force the connectors together.**

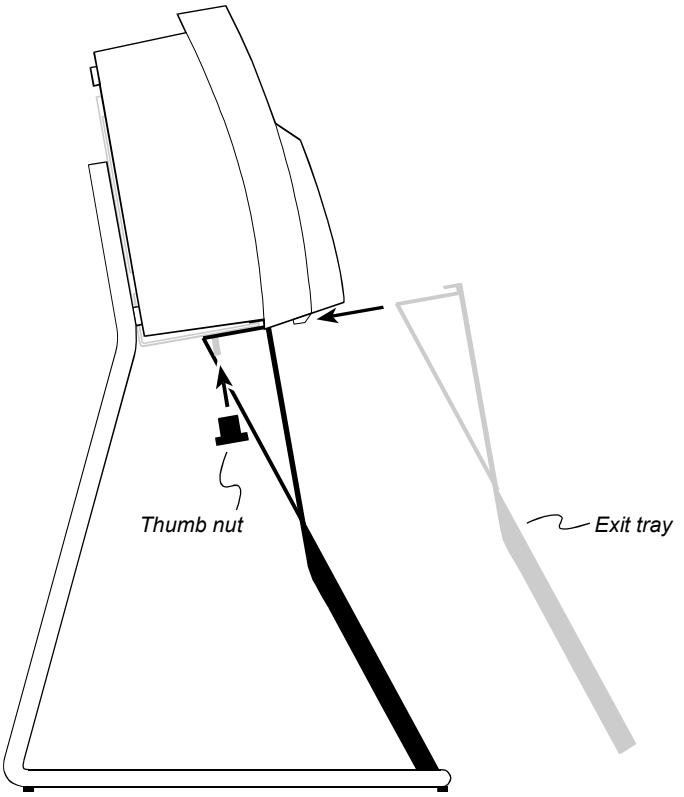
WARNING: If the SCSI connector has bent pins, it will damage the SCSI port in the digitizer. Do not attempt to straighten bent pins. Discard any SCSI cable with bent pins and replace it with a new cable.



6. Install the exit tray.

a. Slide the top of the exit tray over the lower edge of the mounting bracket.

b. Secure the exit tray to the mounting bracket with two thumbnuts.

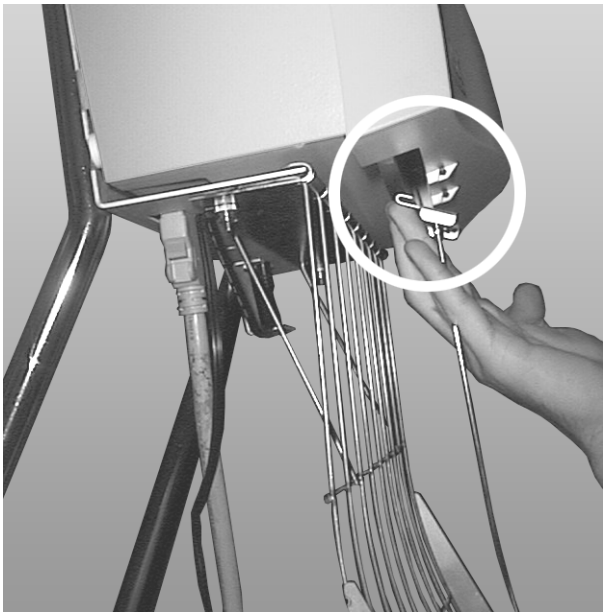


7. Install the film damper assembly.

a. Remove the vinyl backing from the double-sided tape on the surface of the clip, being careful to leave the tape on the clip's surface.

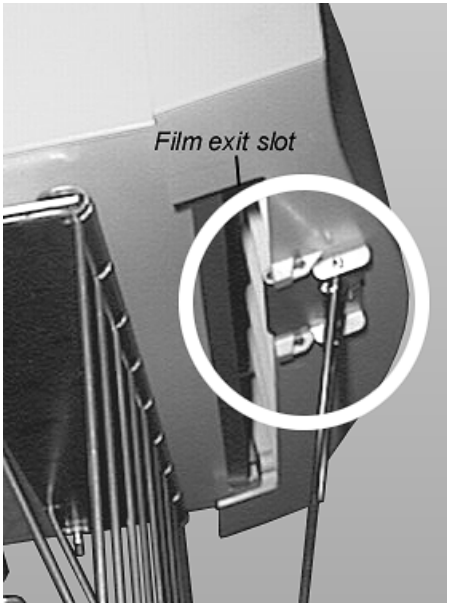
b. Hold the film damper assembly with the wheels down and toward the digitizer.

c. Position the clip (at the top of the assembly) under the digitizer, behind and between the two tabs (see photo below).



d. Slide the clip toward you, over the edge of the digitizer body (see photo at right).

e. Assure the clip is as far forward as it can go, and that it doesn't protrude into the film exit slot (see photo at right).



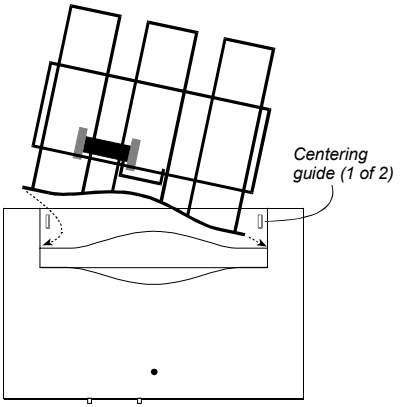
8. Install the entrance tray.

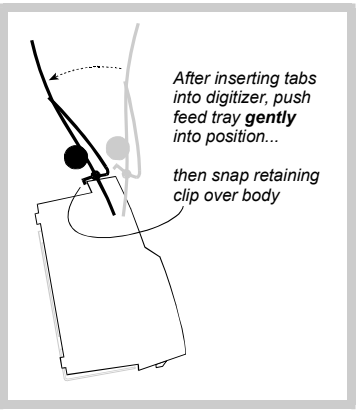
a. Hold the entrance tray with the wheels away from you, and the top tilted toward you.

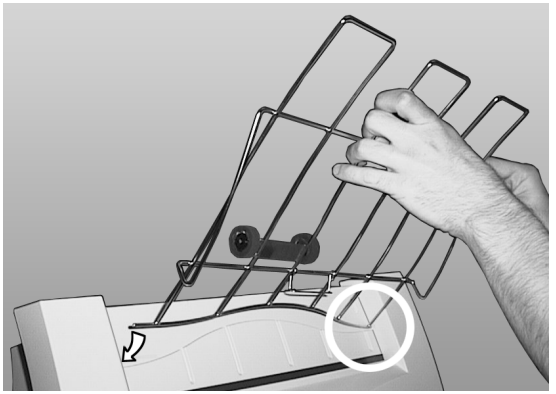
b. Slide one tip into the hole in the digitizer as far as it will go.

c. Slide the other tip into the opposite hole.

d. Center the entrance tray, then push its top gently back until the tray fits against the digitizer (see below right), between the two centering guides. Snap the retaining clip over the upper edge of the digitizer body.

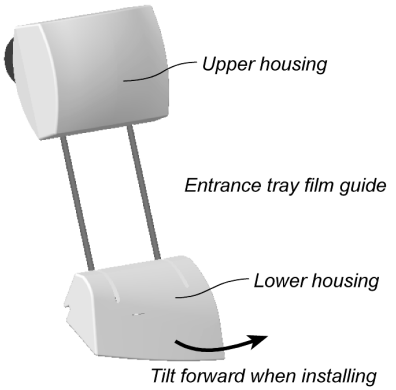






9. Install the entrance tray film guide assembly.

Note: Skip this step if you are installing a single film unit.



a. Grasp the upper housing in one hand.

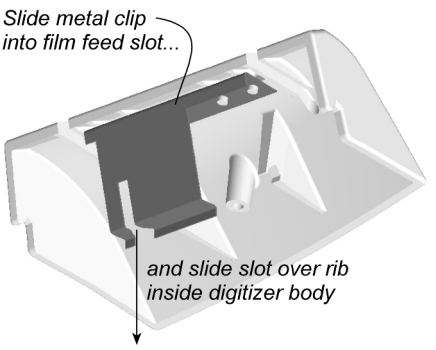
b. Hold the upper housing so that its foam wheels are slightly to the left of the wheels on the entrance tray.

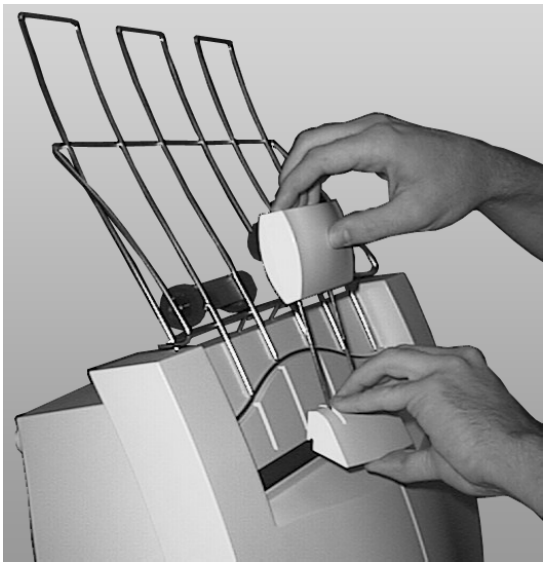
c. Grasp the lower housing with the other hand and tilt its bottom edge toward you.

d. Slide the metal clip in the back of the lower housing into the film feed slot and position the clip's slot over the rib inside the digitizer body.

e. Press the lower housing downward until it snaps in place.

f. Check wheel alignment: the wheels in the film guide assembly should now be aligned with the wheels on the entrance tray.

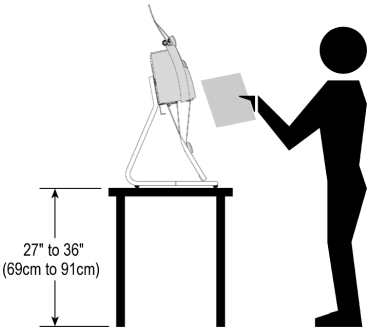




10. Place the digitizer in its working location.

a. Select a working location for the film digitizer. Consider the following points when selecting a suitable location:

- The digitizer can only be used on a desk, countertop or other physically stable surface not more than 36" high.



SAFETY WARNING

The digitizer **must** be placed on mechanically secure horizontal surface, such as a desk or countertop not more than 36" (91cm) high.

The digitizer **must not** be placed on the floor.

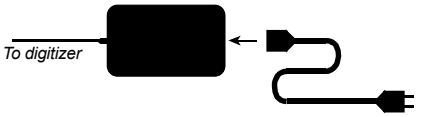
VIDAR Systems Corp. is not liable for any damages or injuries to persons or property associated with improper placement or use of the digitizer.

- The digitizer must be within about 10 feet (2.5m) of an electrical outlet.
- The SCSI cable must be able to connect to both computer and digitizer.
- The digitizer must be away from traffic.

b. Place the digitizer in the location you have selected. Assure the digitizer is stable (for example, it should not rock when touched).

11. Connect the power cord to the power supply.

a. Attach the female end of the electrical power cord to the power supply.



Note: Do not plug the power cord into an electrical outlet at this time.

b. Move the power supply, power cable and electrical cord against the wall, out of the way of traffic.

NEXT: Install the SCSI software ⇨

Wall mounting

the SIERRA™ *plus* film digitizer

In brief, to mount the SIERRA™ *plus* film digitizer you will:

- Select appropriate wall space for the digitizer and determine the best height.
- Attach the mounting bracket to the wall.
- Install the exit tray, film digitizer, film damper, and entrance tray.
- Attach SCSI and power cables.

Details are provided in this chapter.

Before you start...

Be sure you have already set the SCSI ID and SCSI termination switches (see previous chapter). It's easier to see and set these switches before the digitizer is attached to the mounting bracket.

WARNING

Only a qualified building maintenance technician can attach the mounting bracket to a wall (step 3 in this chapter).

Wall mounting of the digitizer must meet all applicable building codes.

VIDAR Systems Corp. is not liable for any damages or injuries to persons or property associated with improper installation or use of the digitizer.

1. Select proper wall space.

> **SAFETY WARNING**
>
> Attach the digitizer-mounting bracket to a permanent wall. Do not attach the mounting bracket to a temporary wall, unsecured wall or wall divider.

Consider the following points when selecting a location for the digitizer:

- The digitizer requires a space that is at least:
  - 43 inches (109.2cm) high.
  - 21 inches (53.4cm) wide.
  - 9 inches (22.9cm) deep.

- The digitizer's entrance tray extends above the mounting bracket, and its exit tray extends below the mounting bracket. Carefully study the diagram on the next page to assure enough wall space is available—above, below and to the sides.

- The digitizer's entrance tray accommodates films up to 17 inches (43.2cm) high. A 17-inch film extends 3 inches (7.6cm) above the feed tray. This is accounted for in the mounting space dimensions on the next page.

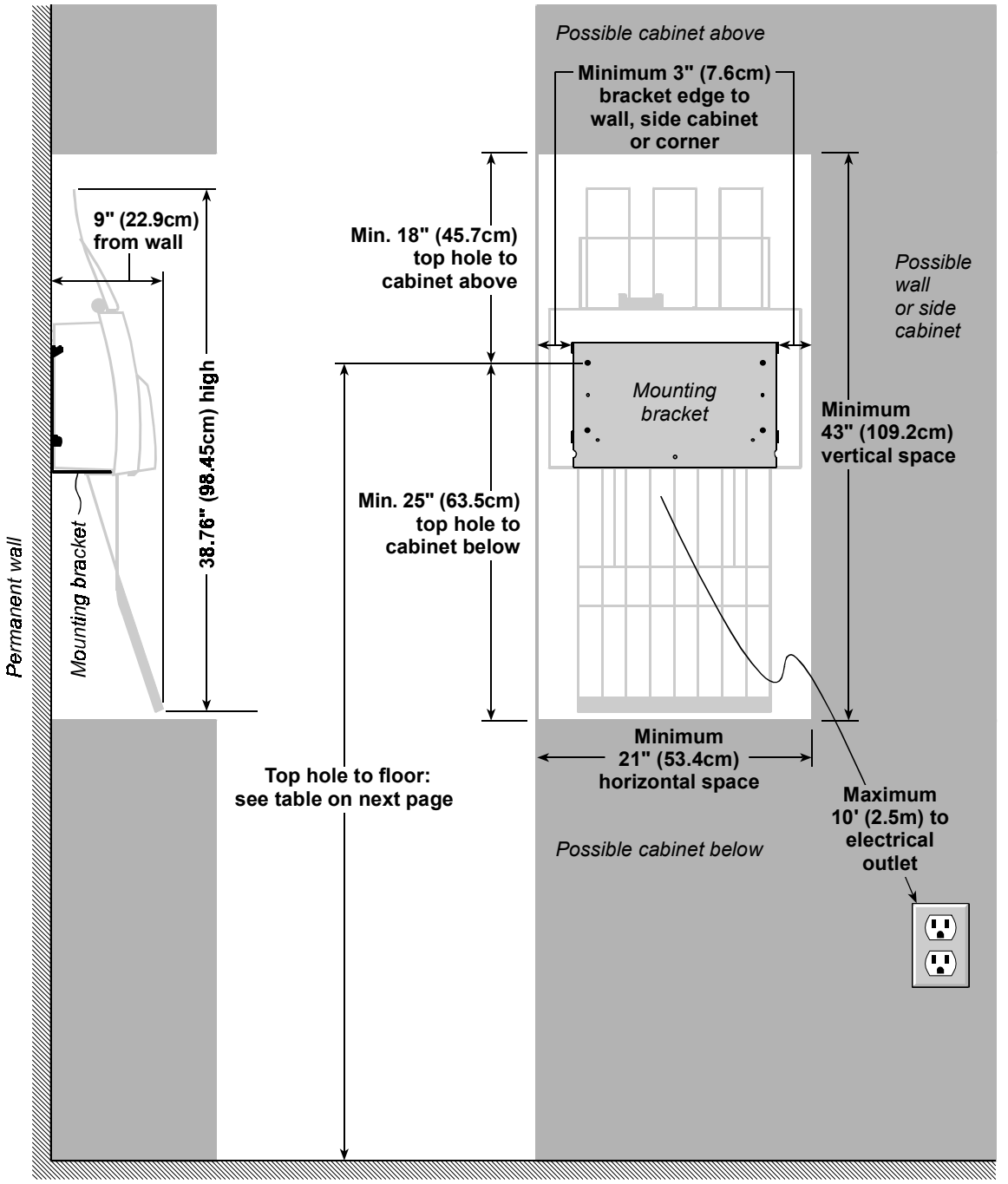
- The digitizer can fit below an overhead cabinet, above a countertop, or between an overhead cabinet and a countertop—as long as the mounting dimensions shown on the next page are satisfied.

- Locate the digitizer at an efficient working height. See step 2 in this chapter for recommendations.

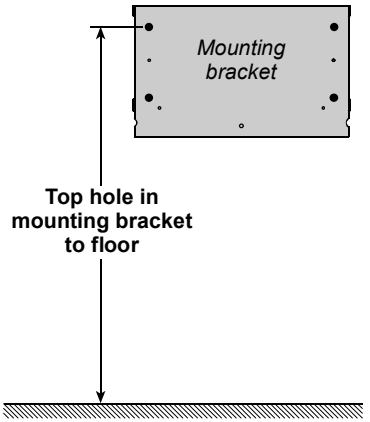
- The digitizer must be within 10 feet (2.5m) of an electrical outlet.

- Locate the digitizer away from traffic.

> **Note:** If suitable wall space cannot be found, you **must** mount the digitizer on the table-top stand.


Possible cabinet above
Minimum 3" (7.6cm) bracket edge to wall, side cabinet or corner
9" (22.9cm) from wall
Min. 18" (45.7cm) top hole to cabinet above
Possible wall or side cabinet
Mounting bracket
Minimum 43" (109.2cm) vertical space
38.76" (98.45cm) high
Permanent wall
Mounting bracket
Min. 25" (63.5cm) top hole to cabinet below
Minimum 21" (53.4cm) horizontal space
Top hole to floor: see table on next page
Maximum 10' (2.5m) to electrical outlet
Possible cabinet below

2. Determine best mounting bracket height.

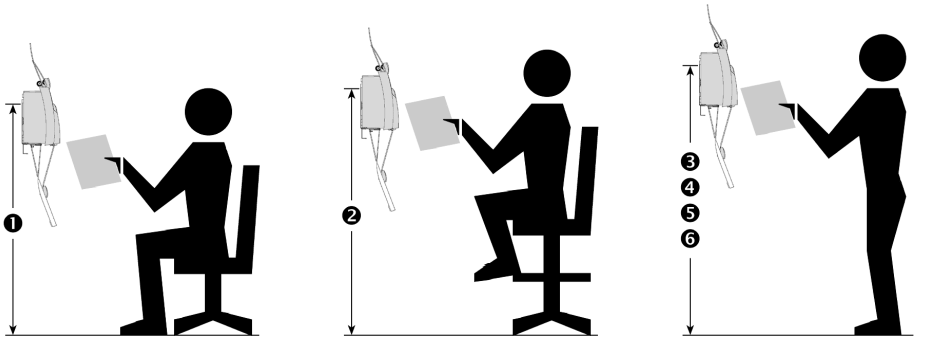


The digitizer should be mounted at a height that supports efficient working. Consider how the digitizer will be used, and by whom:

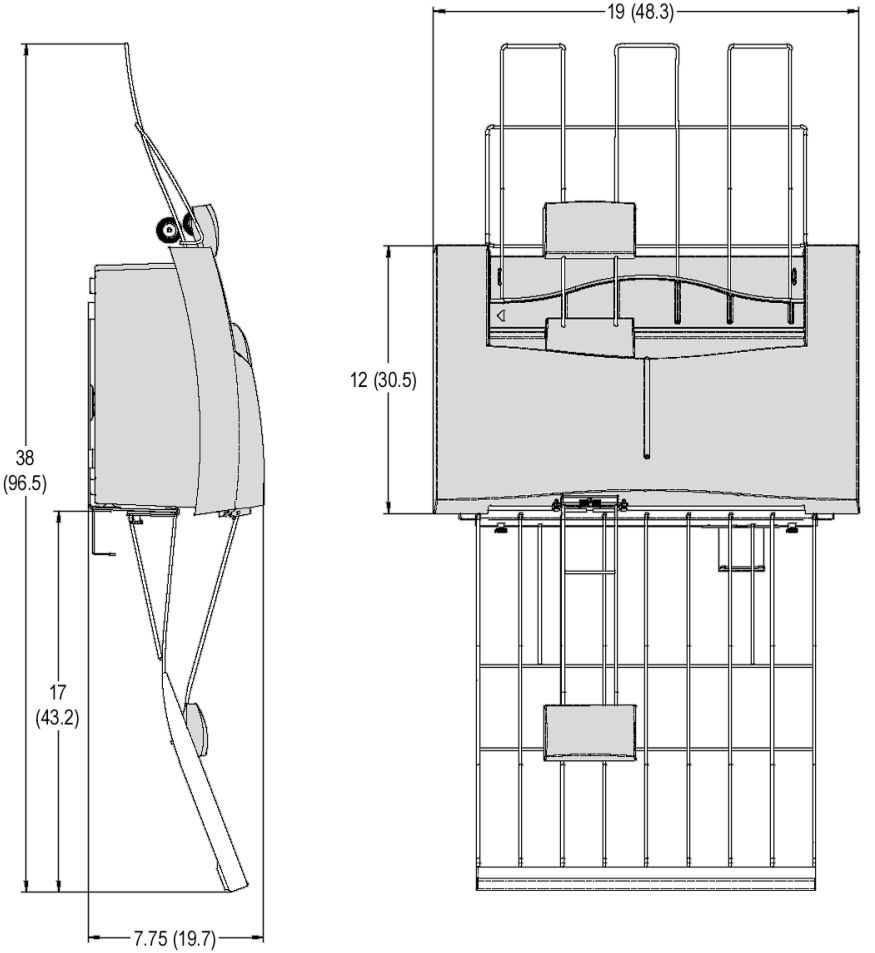
- Will the operator be sitting or standing?
- If the operator will be sitting, what is the chair's seat height?
- If the operator will be standing, how tall is the operator?

The table below shows where the digitizer mounting bracket's top mounting hole should be located for various operator positions.

Operator position	Distance from top mounting hole to floor	
Lowest possible digitizer height	27"	69cm
❶ Sitting, desk chair (seat height: 16" to 19" / 41cm to 48cm)	27" to 38"	68cm to 96cm
❷ Sitting, lab chair (seat height: 26" to 29" / 66cm to 74cm)	46" to 50"	117cm to 127cm
❸ Standing (operator height: 4'6" to 5' / 137cm to 152cm)	49" to 55"	124cm to 140cm
❹ Standing (operator height: 5' to 5'6" / 152cm to 168cm)	55" to 61"	140cm to 155cm
❺ Standing (operator height: 5'6" to 6' / 168cm to 183cm)	61" to 67"	155cm to 170cm
❻ Standing (operator height: 6' to 6'6" / 183cm to 198cm)	67" to 73"	170cm to 185cm



Dimensions for wall-mounted digitizer



Dimensions are in inches (dimensions in parentheses are in centimeters)

3. Attach the mounting bracket to the wall.

WARNING

Only a qualified building maintenance technician can attach the mounting bracket to a wall. Wall mounting of the digitizer must meet all applicable building codes.

Wall mounting requires the use of four wall anchors (supplied by the customer), each of which must be rated for at least 30 pound load capacity.

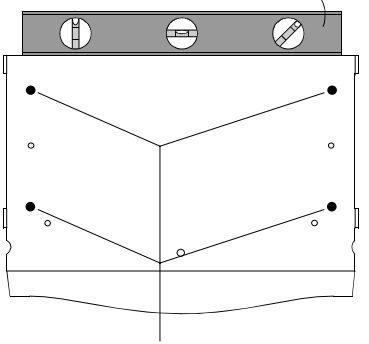
VIDAR Systems Corp. is not liable for any damages or injuries to persons or property associated with improper installation or use of the digitizer.

Taking into account...

- Space requirements (step 1 in this chapter) and
- Height above the floor (step 2 in this chapter) and
- That the bracket must be level (**use a carpenter's level**)...

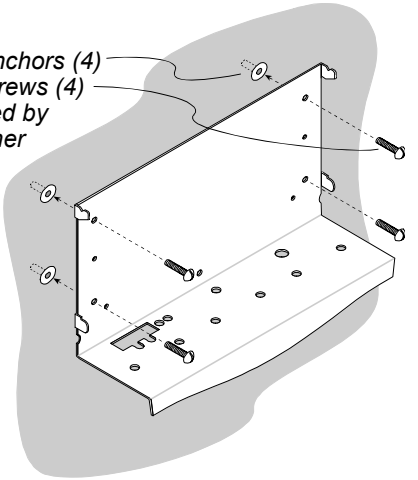
Attach the mounting bracket to a permanent wall using four wall anchors rated for at least 30 pounds each.

Use carpenter's level to assure mounting bracket is horizontal—*films will not feed properly if mounting bracket is tilted*



Use these four holes for wall mounting

Wall anchors (4) and screws (4) supplied by customer



4. Mount the digitizer.

a. Locate the four mounting slots on the back of the digitizer. These slots match the four tabs on the mounting bracket.

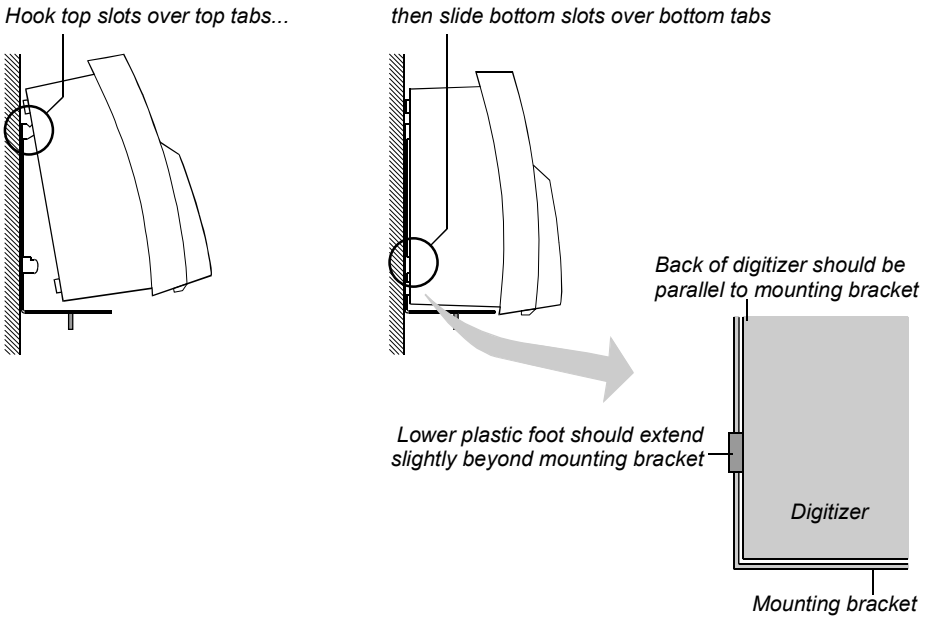
b. Position the digitizer so its front is facing you (VIDAR logo is visible).

c. Grasp the digitizer by its sides.

d. Slide the digitizer's upper mounting slots over the upper tabs on the mounting bracket (as shown below left). Assure that the slots drop into the notches in the tabs.

e. Rotate the bottom of the digitizer toward the wall, so the bottom mounting slots slide over the bottom tabs on the mounting bracket (as shown below center).

Note: When the digitizer is properly mounted, its rear panel is in full contact with the grounding springs on the bracket.


Hook top slots over top tabs...
then slide bottom slots over bottom tabs
Back of digitizer should be parallel to mounting bracket
Lower plastic foot should extend slightly beyond mounting bracket
Digitizer
Mounting bracket

5. Route and connect the power cable.

a. Locate the power supply. Identify the power cable (permanently attached to the power supply) and the power connector at its end.

> **WARNING:** Do not connect the AC power cord at this time.

b. About 10 inches (25cm) from the end of the power cable form a partial loop (see below left).

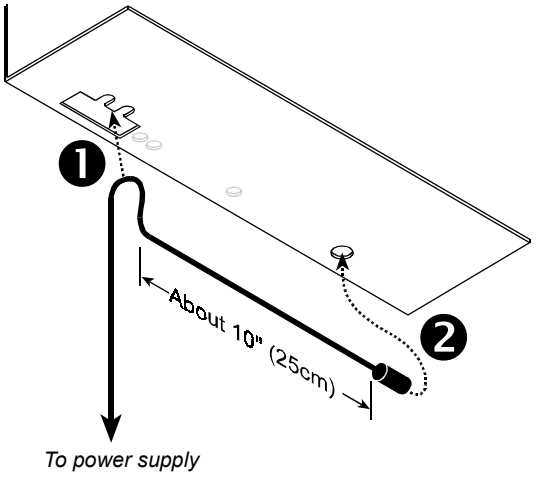
c. Insert the loop into the rectangular hole in the bottom of the mounting bracket, and slide it into the cutouts toward the front (below, left, #1).

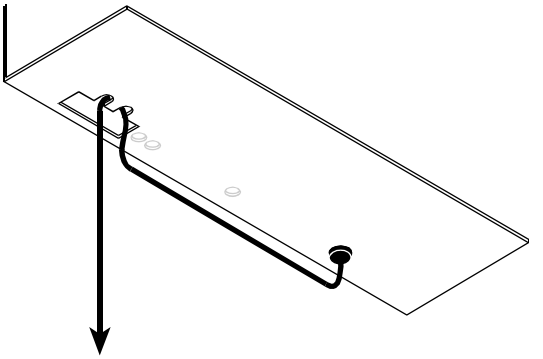
> **Note:** Make sure the power cable is clear of the rectangular hole and doesn't block the SCSI connector.

d. Plug the end of the power cable into the jack near the right end of the mounting bracket (below, left, #2).

> **IMPORTANT:** Never force the power connector. If you have difficulty attaching the power connector, assure that the digitizer's power jack is aligned with the mounting bracket hole.

For clarity, the digitizer and other details have been omitted from these figures



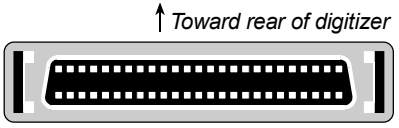


6. Connect the SCSI cable.

Note: Before connecting the SCSI cable, be certain that the SCSI cable isn't connected to anything else and the digitizer power supply is unplugged.

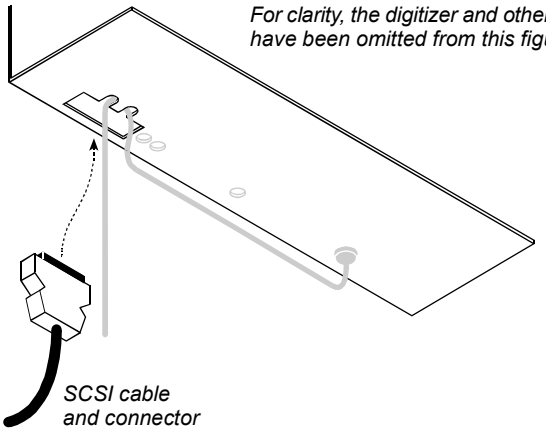
a. Locate the SCSI cable.

b. Orient the SCSI connector as shown here. ➔



c. **Carefully** attach the SCSI connector to the digitizer's SCSI port connector (located inside the rectangular hole in the mounting bracket). Apply even pressure to avoid bending SCSI connector pins. **Do not force the connectors together.**

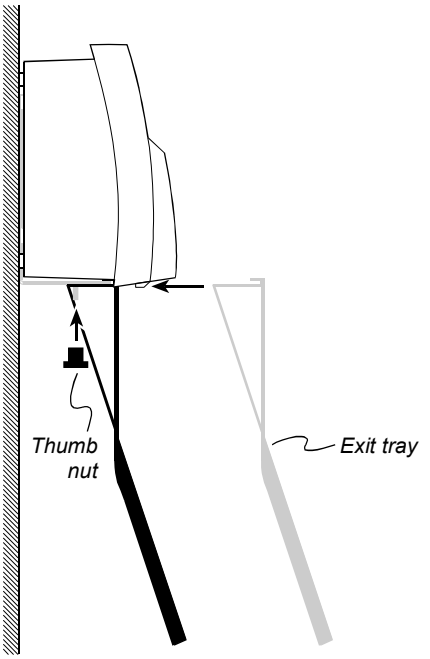
WARNING: If the SCSI connector has bent pins, it will damage the SCSI port in the digitizer. Do not attempt to straighten bent pins. Discard any SCSI cable with bent pins and replace it with a new cable.



7. Install the exit tray.

a. Slide the top of the exit tray over the lower edge of the mounting bracket.

b. Secure the exit tray to the mounting bracket with two thumb nuts.

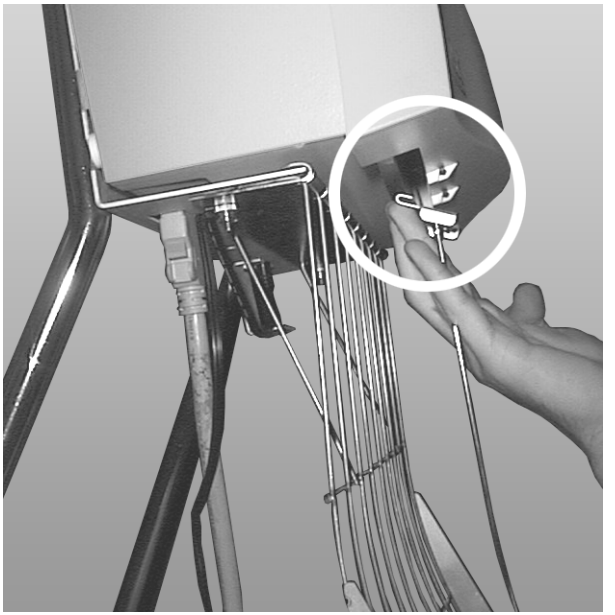


8. Install the film damper assembly.

a. Remove the vinyl backing from the double-sided tape on the surface of the clip, being careful to leave the tape on the clip's surface.

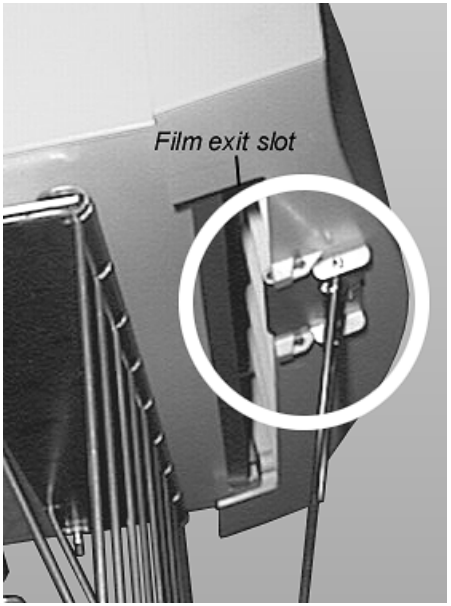
b. Hold the film damper assembly with the wheels down and toward the digitizer.

c. Position the clip (at the top of the assembly) under the digitizer, behind and between the two tabs (see photo below).



d. Slide the clip toward you, over the edge of the digitizer body (see photo at right).

e. Assure the clip is as far forward as it can go, and that it doesn't protrude into the film exit slot (see photo at right).



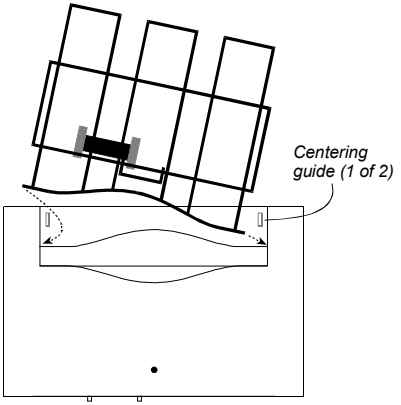
9. Install the entrance tray.

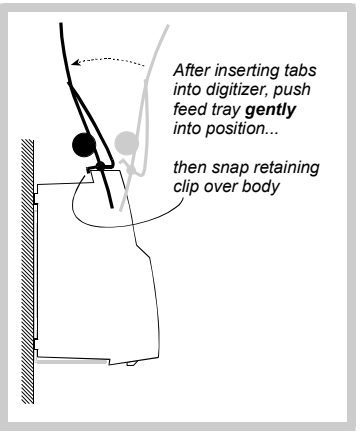
a. Hold the entrance tray with the wheels away from you, and the top tilted toward you.

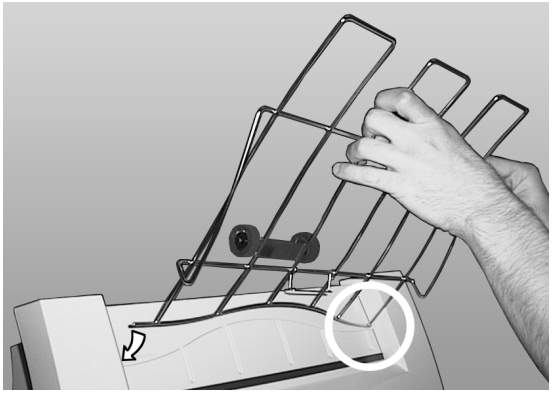
b. Slide one tip into the hole in the digitizer as far as it will go.

c. Slide the other tip into the opposite hole.

d. Center the entrance tray, then push its top gently back until the tray fits against the digitizer (see below right), between the two centering guides. Snap the retaining clip over the upper edge of the digitizer body.

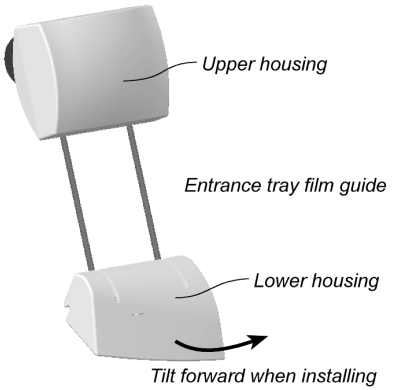






10. Install the entrance tray film guide assembly.

Note: Skip this step if you are installing a single film unit.



a. Grasp the upper housing in one hand.

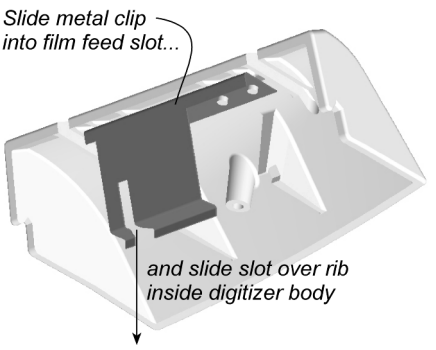
b. Hold the upper housing so that its foam wheels are slightly to the left of the wheels on the entrance tray.

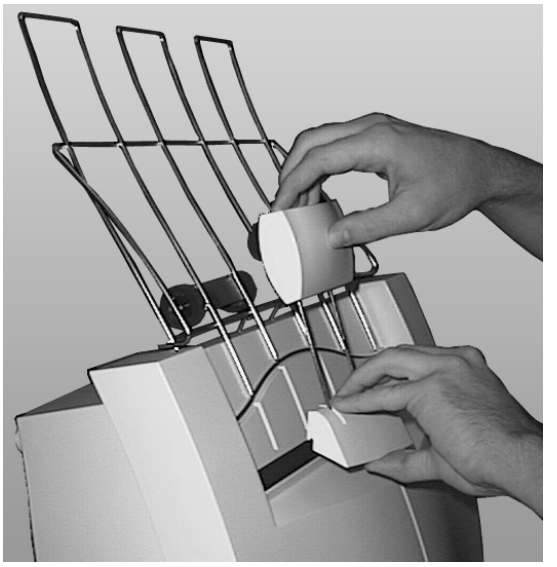
c. Grasp the lower housing with the other hand and tilt its bottom edge toward you.

d. Slide the metal clip in the back of the lower housing into the film feed slot and position the clip's slot over the rib inside the digitizer body.

e. Press the lower housing downward until it snaps in place.

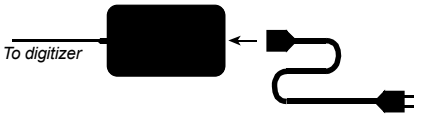
f. Check wheel alignment: the wheels in the film guide assembly should now be aligned with the wheels on the entrance tray.





11. Connect the power cord to the power supply.

a. Attach the female end of the electrical power cord to the power supply.



Note: Do not plug the power cord into an electrical outlet at this time.

b. Move the power supply, power cable and electrical cord against the wall, out of the way of traffic.

NEXT: Install the SCSI Hardware ⇨

Installing SCSI hardware

for the SIERRA™ *plus* film digitizer

This chapter shows you how to install the SCSI interface card in your computer. You will install the SCSI software the next chapter.

1. Unpack the SCSI accessory box.

Open the Adaptec™ SCSI accessories box and identify the following components:

✓	Description
☐	Adaptec™ SCSI Card 2930U (**CAUTION:** Leave the card in its anti-static package until just before it is installed.)
☐	50-pin internal SCSI cable (not used for SIERRA™ *plus*)
☐	Adaptec™ SCSI driver installer diskette and EZ-SCSI CD-ROM
☐	Adaptec™ documentation

Warning
Before you begin the installation procedure, turn off all power to the computer and peripherals. Connecting the SCSI cable with the power on can cause serious damage to the unit or your computer.

Précaution
Avant de commencer la connexion, assurez vous que votre ordinateur soit bien éteint. Toute connexion du cable SCSI et courant, pourrait gravement endommager votre numériseur ou ordinateur.

Advertencia
Antes de continuar con la instalación, favor de apagar su computadora y periférico. Conectando el cable SCSI con la computadora prendida puede causar daño al equipo o a su computadora.

Warnung
Vor dem Installieren den Computer und angeschlossene Geräte ausschalten. Durch Anschluß des SCSI Kabels an angeschaltete Geräte können ernsthafte Schäden entstehen.

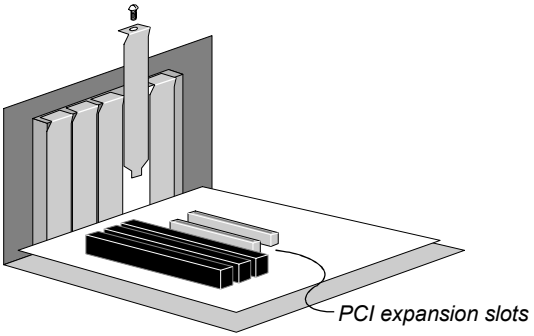
2. Install the SCSI card.

a. Turn off power to the computer and disconnect the computer's power cord from the electrical outlet.

b. Remove the cover from the computer. (Refer to the computer's manual for instructions on removing the cover.)

> **Tip:** If the computer is a tower model, it's easier to install the SCSI card when the tower is laid on its side.

c. Locate an unused PCI expansion slot (PCI connectors are typically white or ivory). Remove the expansion slot cover. Save the slot cover screw for use in step 2g.

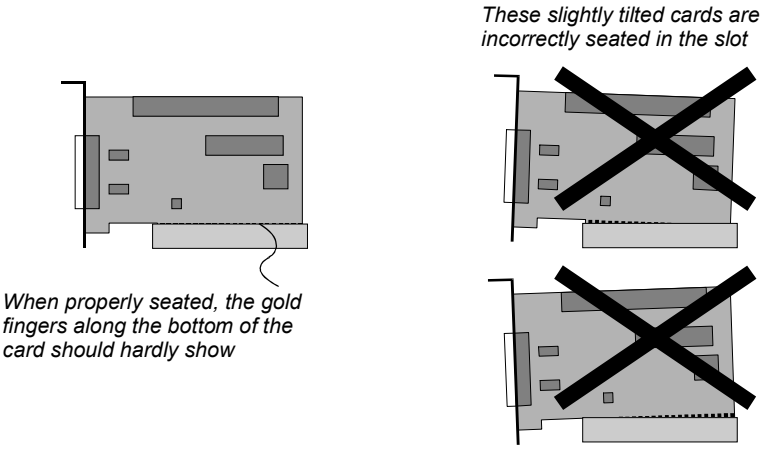


d. Before handling the SCSI card, discharge your static electricity by touching a metal part on the computer chassis.

e. Remove the SCSI Card 2930U from its anti-static packaging. **Handle the card only by its edges.**

continued

f. Insert the SCSI Card 2930U into the PCI expansion slot. Press down firmly until the SCSI card clicks into place.


These slightly tilted cards are incorrectly seated in the slot
When properly seated, the gold fingers along the bottom of the card should hardly show

g. Secure the SCSI card with the expansion slot screw you removed in step 2c.

h. Replace the cover on the computer.

i. Attach one end of a SCSI cable to the SCSI card's external connector.

NEXT: Install the SCSI software ⇨

Installing SCSI software

for the SIERRA™ *plus* film digitizer

So far, you have installed the SCSI hardware in your computer and assembled the film digitizer. This chapter covers the final installation phase: installing SCSI software on your computer.

The steps you follow for SCSI software installation depend on the operating system resident on your computer. Instructions are provided for:

- Windows 2000.
- Windows 98.
- Windows 95.
- Windows NT 4.0.

Apply power: digitizer first, then PC

1. Assure the PC is turned **off**.

   Note: Always apply power to the digitizer before turning on the computer. This enables the computer to recognize the digitizer.

2. Connect the digitizer's electrical power cord (connected to the power supply) to an electrical outlet.

   Note: The film digitizer does not have a power switch.

3. Observe the LED on the front of the digitizer: the LED should flash yellow for several minutes. This indicates the digitizer is performing internal tests.

4. When the LED stops flashing and remains green, turn on the PC.

5. Go to the section in this chapter that matches your computer's operating system.

Computers with Windows 2000

When this manual was published there were no qualified Adaptec SCSI drivers for Windows 2000.

Please contact VIDAR before installing under Windows 2000.

Computers with Windows 98

1. After the computer boots, the **Add New Hardware** wizard appears.
2. Click **Next**.
3. Click **Next**. Activate **Search for best driver for your device**.
4. Insert the Adaptec Driver Installer diskette into the diskette drive.
5. When prompted to specify a location, type **a:**\, then click **Next**.
6. Click **Next**. Windows will now select the best driver for the device.
7. Click **Finish**.
8. When the installation is finished, remove the diskette, then click **Yes** to restart the computer. Go to step 2 of "Using the SCSI Utility," later in this chapter.

Computers with Windows 95

Windows 95 has two versions. Use the corresponding steps below.

If the "New Hardware Found" window appears...

1. Select Driver from disk provided by hardware manufacturer.
2. Insert the Adaptec Driver Installer diskette into the diskette drive.
3. In the Install from Disk window, type **a:\win95**. Windows will install the required driver.
4. After the installation is finished, remove the diskette.
5. Go to "Using the SCSI Utility," later in this chapter.

If the "Update Device Driver" wizard appears...

1. Insert the Adaptec Driver Installer diskette into the diskette drive.
2. Click **Next**.
3. The Device Driver Wizard will not detect the driver. Click **Other Locations**, then type **a:\win95**.
4. Windows detects the host adapter as the *Adaptec AHA-2930U PCI SCSI Controller*. Click **Finish**.
5. When prompted to install the Adaptec Driver Installer diskette, then click **OK**.
6. When prompted for the location of the drivers, type **a:\win95**, then press ENTER.
7. After the installation is finished, remove the diskette.
8. Go to "Using the SCSI Utility," later in this chapter.

Computers with Windows NT 4.0

Note: Windows NT Service Pack 4 is recommended.

1. Start Windows NT 4.0.
2. Click the **Start** button, click **Settings**, then click **Control Panel**.
3. In the **Control Panel** window, double-click **SCSI Adapters**.
4. In the **SCSI Adapters** window, click the **Drivers** tab.
5. In the **Drivers** tab, click **Add**.
6. In the **Install Driver** window, click **Have Disk**.
7. Insert the Adaptec Driver Installer diskette into the diskette drive.
8. In the **Install from Disk** window, type **a:\win95**, then click **OK**.
9. Click **Adaptec AIC-78xx PCI SCSI Controller Driver** in the list.

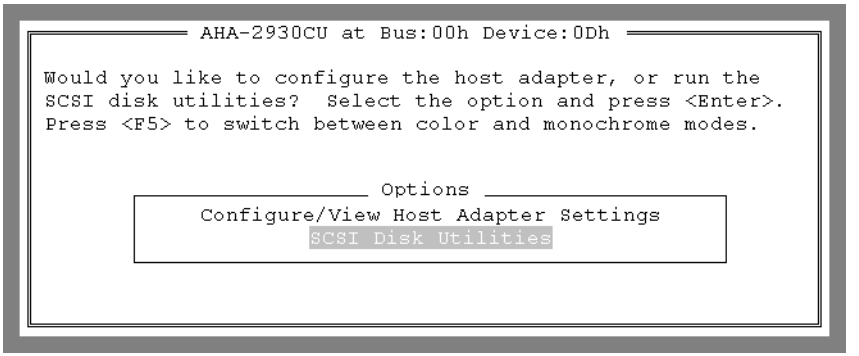
   Note: If an Adaptec AIC-78xx driver is already installed, you'll be prompted for the current or new driver installation. Click **New**.

10. Go to "Using the SCSI Utility," later in this chapter.

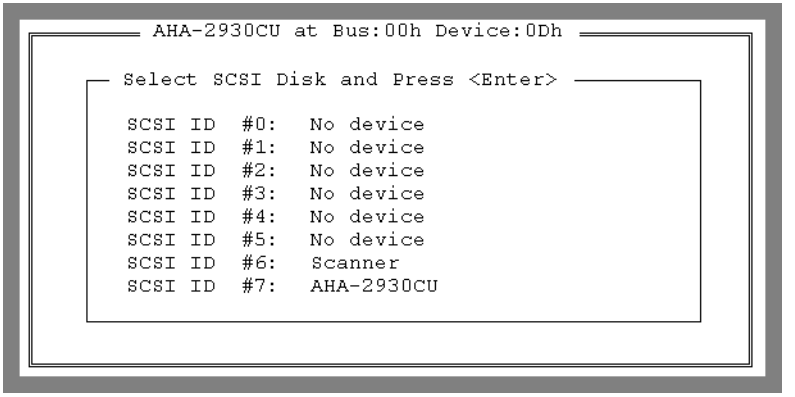
Using the SCSI Utility

1. Reboot the computer.

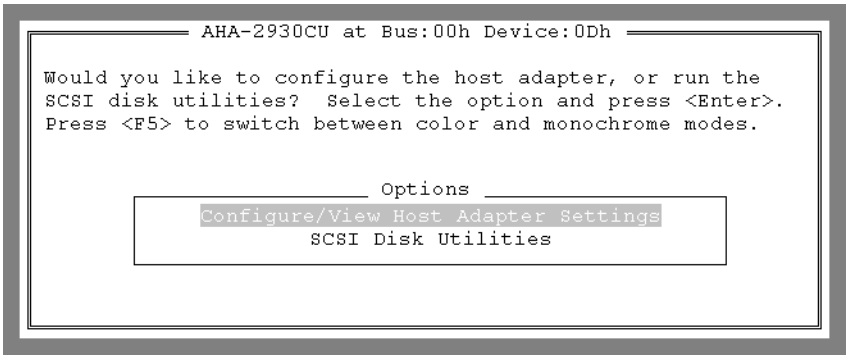
2. When the computer boots up, it will detect the SCSI Adapter. Quickly hit **<Ctrl A>** to access the SCSI Utility.


AHA-2930CU at Bus:00h Device:0Dh
Would you like to configure the host adapter, or run the
SCSI disk utilities? Select the option and press <Enter>.
Press <F5> to switch between color and monochrome modes.
Options
Configure/View Host Adapter Settings
SCSI Disk Utilities

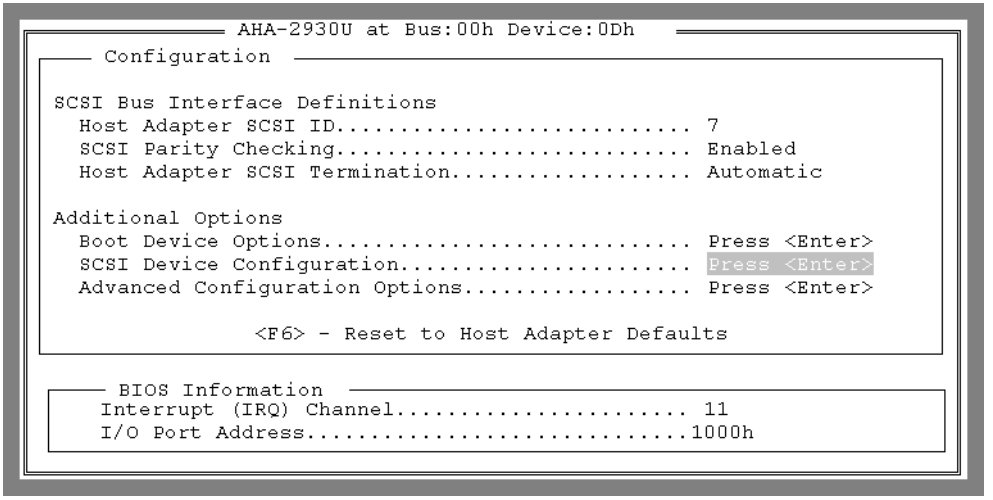
3. In the **Options** menu (see above), select the **SCSI Disk Utilities** option. This will scan the SCSI bus and produce a screen similar to this:


AHA-2930CU at Bus:00h Device:0Dh
Select SCSI Disk and Press <Enter>
SCSI ID #0: No device
SCSI ID #1: No device
SCSI ID #2: No device
SCSI ID #3: No device
SCSI ID #4: No device
SCSI ID #5: No device
SCSI ID #6: Scanner
SCSI ID #7: AHA-2930CU

The card should be recognized on ID#7 and the scanner on the ID you set earlier. Press **<Esc>** to exit.


AHA-2930CU at Bus:00h Device:0Dh
Would you like to configure the host adapter, or run the
SCSI disk utilities? Select the option and press <Enter>.
Press <F5> to switch between color and monochrome modes.
Options
Configure/View Host Adapter Settings
SCSI Disk Utilities

4. Back at the **Options** menu, select the **Configure/View Host Adapter Settings** option (see above).



Under **Additional Options**, select **SCSI Device Configuration** (see above). Press **<Enter>**.

5. You will see SCSI Device ID #s 0 to 7. **Initiate Sync Negotiation** will be set to **Yes** or **No**. Set them all to **No**. Press **<Esc>** to exit.

```
                    SCSI Device Configuration

SCSI Device ID                      #0   #1   #2   #3   #4   #5   #6   #7
-------------------------------------------------------------------------

Initiate Sync Negotiation..... no   no   no   no   no   no   no   no
Maximum Sync Transfer Rate(MB/Sec) 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0
Enable Disconnection.............. yes  yes  yes  yes  yes  yes  yes  yes

------- Options Listed Below Have NO EFFECT if the BIOS is Disabled -------
Send Start Unit Command........... no   no   no   no   no   no   no   no
BIOS Multiple LUN Support......... no   no   no   no   no   no   no   no
Include in BIOS Scan.............. yes  yes  yes  yes  yes  yes  yes  yes
```

6. Select **Advanced Configuration Options** (see below) and press **<Enter>**.

```
                    AHA-2930U at Bus:00h Device:0Dh
  ------ Configuration ------

  SCSI Bus Interface Definitions
    Host Adapter SCSI ID.......................... 7
    SCSI Parity Checking.......................... Enabled
    Host Adapter SCSI Termination................. Automatic

  Additional Options
    Boot Device Options........................... Press <Enter>
    SCSI Device Configuration..................... Press <Enter>
    Advanced Configuration Options................ Press <Enter>

                  <F6> - Reset to Host Adapter Defaults

  ------ BIOS Information ------
      Interrupt (IRQ) Channel..................... 11
      I/O Port Address.............................1000h
```

Select **Host Adapter Bios**. Set to **Disabled**.

7. Press **<Esc>,** then **SAVE SETTINGS**, then **REBOOT**.

NEXT: You can now operate the digitizer ⇨

Operating

the SIERRA™ *plus* film digitizer

Apply power—then leave on continuously

If the film digitizer is already on and ready to scan (LED on the front of the digitizer is green), then skip this section.

1. Assure the PC is turned **off**.

   Note: Always apply power to the digitizer before turning on the computer. This enables the computer to recognize the digitizer.

2. Connect the digitizer's electrical power cord (connected to the power supply) to an electrical outlet.

   Note: The film digitizer does not have a power switch.

3. Observe the LED on the front of the digitizer: the LED should flash yellow for several minutes. This indicates the digitizer is performing internal tests and calibration.

4. When the LED stops flashing and remains green, turn on the PC.

   The digitizer is now ready to scan films.

   Note: Normally, **do not turn off the digitizer**. Leave it on continuously. Turn the PC on and off as needed.

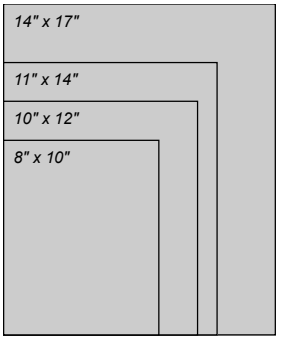
   Note: To reset the digitizer, see the next chapter, "Troubleshooting."

About films and their orientation

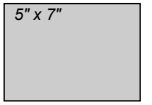
The SIERRA™ *plus* handles standard radiograph films up to 14" x 17".

It is important to load films in the proper orientation:

- Load larger films in portrait orientation—just as you would view them on a light box (see below left).
- Load films whose longest dimension is 7" or less in landscape orientation for proper film detection and staging (see below right).



Load larger films in portrait orientaion



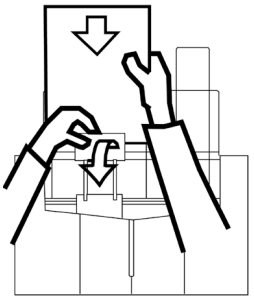
Load smaller films in landscape orientation

You can feed multiple films (up to six), and you can mix film sizes in one stack—as long as they are in the orientations shown above.

Note: Unlike some VIDAR film digitizers, the SIERRA™ *plus* does not have a prescan (ROI or Region Of Interest) function.

CAUTION: X-ray images displayed on a computer monitor are representative only. Dimensional and grayscale inaccuracies may result from the build-up of tolerances in the digitizer, the display board and the computer. For this reason, special precautions must be exercised when taking measurements from the digitized image. Please refer to the user's manual for your digitizing software for more information.

Loading a single film

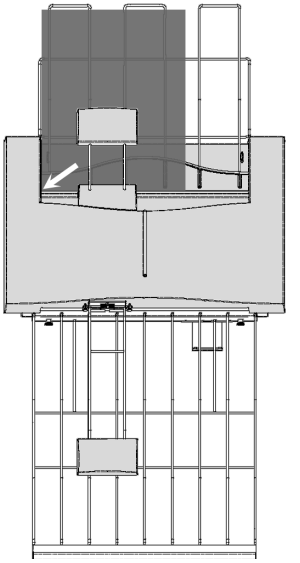


1. Assure the LED on the front of the digitizer is solid green.
2. Hold the film in front of you as you would view it on a light box.

> **Note:** If you load the film incorrectly, the digitized image may be flipped or rotated.

3. Pull the film guide forward, place the film in the entrance slot—as far left as it will go, then gently release the film guide.

   When the SIERRA™ *plus* detects the film, it *stages* the film—it pulls the film in about 1" (2.5cm), then pushes the film back out about 1/2" (1.25cm).



> **Note:** When the film is staged, it is over the digitizer's light path. SIERRA's ADC (Automatic Digitizer Calibration) feature requires that the light path be clear for proper background calibration. Thus, if a film remains in the digitizer for more than 5 minutes, it will be pushed up 1/4" (0.6cm) to clear the light path. Later, when you execute your software's **Scan** command, the film will be re-staged before it is digitized.

continued

4. Using your scanning software, execute the **Scan** command.

   The LED will flash green rapidly, indicating the scan is in progress.

   When the scan is complete, the LED will return to solid green.

> **Note:** After the scan, the film may or may not be ejected—your scanning software determines what happens. If the software's **Auto Eject** function is activated, the film will drop into the exit tray. Otherwise, the lower rollers in the scanner will hold the film until one of the following occurs:
> - Another film is detected.
> - You manually eject the film from the software.
> - 5 minutes have passed (after which the film will be ejected automatically.

Loading multiple films

The SIERRA™ *plus* can accept **up to 6** films of mixed sizes.

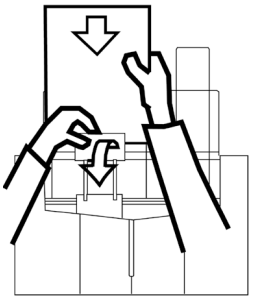
CAUTION: Do not load more than 6 films at one time.

1. Determine whether your scanning software requires you to enter the number of films *before* or *after* you load films into the digitizer.

2. If your scanning software requires that you enter the number of films *before* loading, enter the number of films you are about to scan.

3. Assure the LED on the front of the digitizer is solid green.

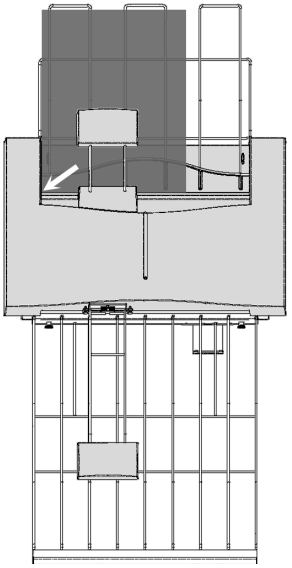
4. Hold the first film in front of you as you would view the films on a light box.



   Films at the back of the stack are digitized first.

5. Pull the film guide forward, then place the first film in the entrance slot—as far left as it will go, then gently release the film guide.

   When the SIERRA™ *plus* detects the first film, it *stages* the film—it pulls the film in about 1" (2.5cm), then pushes the film back out about 1/2" (1.25cm).



6. Insert the remaining films—*one at a time*—in front of the first film and as far left as they will go, then gently release the film guide.

continued

Note: When the film is staged, it is over the digitizer's light path. SIERRA's ADC (Automatic Digitizer Calibration) feature requires that the light path be clear for proper background calibration. Thus, if a film remains in the digitizer for more than 5 minutes, it will be pushed up 1/4" (0.6cm) to clear the light path. Later, when you execute your software's **Scan** command, the film will be re-staged before it is digitized.

7. If your scanning software requires that you enter the number of films *after* loading, enter the number of films you are about to scan in one stack.

8. Using your scanning software, execute the **Scan** command.

   The LED will flash green rapidly, indicating the first scan is in progress.

   When the first scan is complete, the second film will be scanned and so forth, until the last film has been scanned.

   When the entire batch has been scanned, the LED will return to solid green.

Note: After the scan, the last film may or may not be ejected—your scanning software determines what happens. If the software's **Auto Eject** function is activated, the film will drop into the exit tray. Otherwise, the lower rollers in the scanner will hold the film until one of the following occurs:

- Another film is detected.
- You manually eject the film from the software.
- 5 minutes have passed (after which the film will be ejected automatically.

Troubleshooting

the SIERRA™ *plus* film digitizer

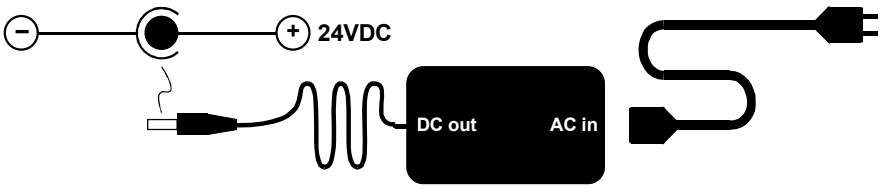
WARNING

Do not open or disassemble the film digitizer. There are no user-serviceable parts inside. Repairs can only be performed by qualified service personnel. If service is required, contact your authorized VIDAR representative or VIDAR Systems Corp.

Normal operation

LED indication	Condition
Flashing yellow	You must wait
Solid green	Ready to scan
Flashing green	Scan in progress

Power supply information



In case of difficulty

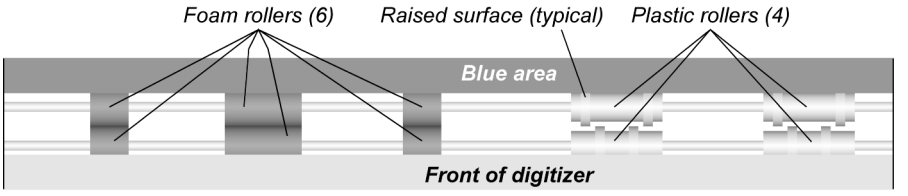
How to use this section:

1. Look through the left columns to find a description of the problem you are having.
2. Follow the instructions (in order) in the "Corrective action" column. If the one corrective action doesn't solve the problem, then carry out the next corrective action.
3. When the instruction is "Get qualified technical help," then:
   a. Contact your system integration specialist (the company or person that installed your VIDAR film digitizer).
   b. If your system integration specialist isn't available, then contact VIDAR Customer Support (medtech@vidar.com).

Error conditions

LED indication	Condition	Corrective action
Fast flashing yellow.	Calibration error.	Get qualified technical help.
No LED...	and scanner functions correctly.	Get qualified technical help.
No LED...	and scanner does not function.	1. Assure that power cable is properly plugged into digitizer (power cable enters below mounting bracket). If digitizer then appears normal, wait for solid green LED, then reboot PC. ***or if that doesn't solve the problem...*** 2. Assure that electrical power cord is properly plugged into power supply. If digitizer then appears normal, wait for solid green LED, then reboot PC. ***or if that doesn't solve the problem...*** 3. Get qualified technical help.

Operational problems

Symptom	Corrective action
Film tilts or skews during scanning.	1. Assure individual films are loaded properly: bottom edge of film parallel to rollers, left edge of film up against digitizer body—as far left as it will go. (Review "Loading a single film" in "Operating" chapter.) 2. (*Multi-film unit only*) Assure multiple films are loaded properly: Insert first film into entrance slot and allow it to stage. Then insert remaining films—one at a time—in front of first film. (Review "Loading multiple films" in "Operating" chapter.) 3. Assure entrance tray is properly position (back against digitizer body) and is clipped to digitizer body. (Review "Install the entrance tray" in "Table-top stand" or "Wall mounting" chapter.) 4. (*Multi-film unit only*) Check entrance tray film guide assembly. Assure rollers in upper housing are aligned with (directly in front of) rollers on entrance tray. (Review "Install the entrance tray film guide assembly" in "Table-top stand" or "Wall mounting" chapter.) 5. Remove any foreign matter from film entrance slot. 6. Look into film entrance slot to observe rollers and roller surfaces. a. Foam rollers on left should be smooth and free of debris. b. Plastic rollers on right should spin freely. Raised surfaces should be smooth.  7. If problem persists, get qualified technical help.

continued

Symptom	Corrective action
After film is loaded and staged properly, a few minutes later film is pushed out of staging area.	When film is staged, it is over digitizer's light path. SIERRA's ADC (Automatic Digitizer Calibration) feature requires that light path be clear for proper background calibration. Thus, if film remains in digitizer for more than 5 minutes, it will be pushed up 1/4" (0.6cm) to clear light path. Later, when you execute your software's **Scan** command, film will be re-staged before it is digitized.
Scanning software's auto-eject is not activated, but films drop into exit tray after a few minutes.	After film is scanned, it is still over digitizer's light path. SIERRA's ADC (Automatic Digitizer Calibration) feature requires that light path be clear for proper background calibration. Thus, if film remains in digitizer for more than 5 minutes, it will be ejected.
Film hangs above film damper after being ejected.	Pull film damper away from exit tray to allow film to drop. (Some films—usually 8" x 10" and smaller—aren't heavy enough to push past film damper.)
Digitizer has been off for several days. First film misfeeds or jams.	Run three or four films through digitizer: load films one at a time, then eject each one (or perform a scan on each film, but this takes longer). Suggestion: leave digitizer on at all times to prevent this problem.
Can't turn digitizer off. Can't find power switch.	SIERRA was designed to be powered continuously. Under normal conditions, digitizer should remain on at all times. If you *must* turn the digitizer on or off, see "Applying and removing power," later in this chapter.
After applying power, LED on front keeps flashing yellow.	After power is applied, digitizer normally requires about 3.5 minutes to normalize and calibrate, during which time the LED will flash yellow. If LED flashes yellow for more than 5 minutes, reset digitizer or turn power off and on again (both procedures described later in this chapter).

continued

Symptom	Corrective action
LED remains dark, in spite of using proper power-on procedure described later in this chapter.	1. Assure wall outlet is providing AC power: obtain another electrical device known to be working, and plug it into that AC wall outlet. ■ If other device doesn't work, AC power is not available at that wall outlet. Get help from building services. ■ If other device does work, AC power is available from that outlet. Go to step 2. 2. With power applied to digitizer, look into digitizer film entrance slot. If you see light coming from inside digitizer, power is on. For this condition (LED dark, internal light on), get qualified technical help. 3. If you have another Sierra film digitizer, try its power supply. ■ If digitizer works with other power supply, original power supply is defective. Obtain replacement VIDAR SIERRA power supply from your system integration specialist. **Do not substitute any other power supply.** ■ If digitizer does not work with other power supply, digitizer is defective. Get qualified technical help.
Film repeatedly moves and stops during scanning.	1. Increase memory allocation for scanning software. (Especially if scanning at high resolutions, memory allocation must be sufficient to accept data stream from digitizer.) 2. If scanning to disk, assure sufficient space is available on disk drive. 3. Assure PC has enough memory available to support scanning application. Close applications not needed for image acquisition from digitizer. 4. If problem persists, get qualified technical help.

continued

Symptom	Corrective action
Digitizer stops scanning and PC locks up.	1. Reset entire system. Remember that SCSI protocol requires that digitizer be powered before PC. a. Turn digitizer off (see "Applying and removing power," later in this chapter.) b. Shut down PC and turn it off. c. Turn digitizer on. d. After digitizer LED turns solid green, turn on PC. 2. Launch scanning software on PC, then try scanning again. If problem persists, get qualified technical help.
Digitizer not recognized on SCSI bus. *and* Digitizer and PC are powered from same power strip. *and* Power strip is used to turn both digitizer and PC on.	1. Connect digitizer to one power strip and PC to another power strip (see details in "Using power strips," later in this chapter). Then: a. Turn digitizer on. b. After digitizer LED turns solid green, turn on PC. 2. If problem persists, get qualified technical help.

How to reset the digitizer

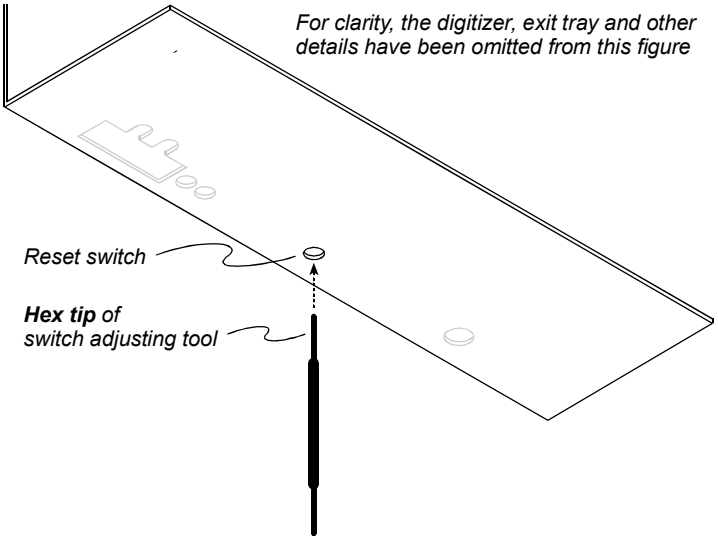
RECOMMENDED RESET procedure

1. Locate the switch-adjusting tool.

   (If the tool is not available, you may use a **non-conductive** rod having a 1/8" or smaller diameter.)

> **WARNING**
>
> Never insert metal or conductive items into the digitizer.

2. Insert the tool's **hex tip** into the hole located in the center of the mounting bracket, then press gently on the Reset button inside the digitizer.


For clarity, the digitizer, exit tray and other details have been omitted from this figure
Reset switch
Hex tip of switch adjusting tool

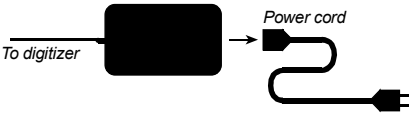
3. The digitizer will perform its calibration.

4. Wait until the digitizer's LED shows solid green.

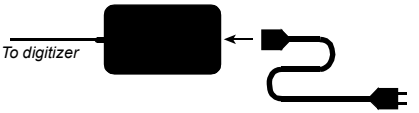
5. Reboot the PC.

ALTERNATE RESET procedure

1. Disconnect the power cord from the power supply.



2. Reconnect the power cord to the power supply.



3. The digitizer will perform its calibration.
4. Wait until the digitizer's LED shows solid green.
5. Reboot the PC.

Managing power

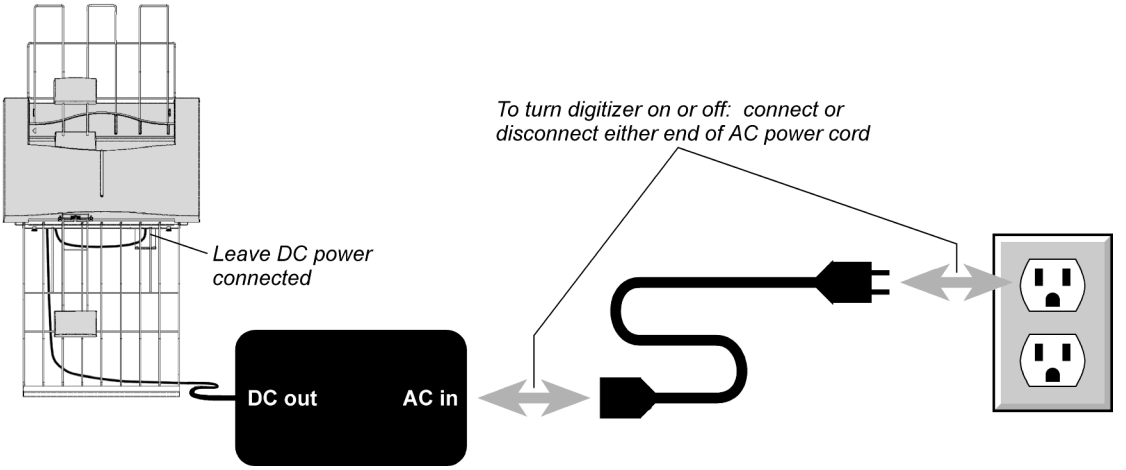
Applying and removing power

WARNING

Do not apply power by plugging the DC power connector into the digitizer while the power supply is live. Do not remove power by unplugging the DC power connector from the digitizer while the power supply is live. Either of these actions could permanently damage the digitizer, the power supply or both.

Note: Sierra was designed to be powered continuously. Under normal conditions, the digitizer should remain on at all times.

Use only the AC power cord to turn the digitizer on or turn it off, as shown here:



Always connect the DC power connector **before** applying power. Do not disconnect the DC power connector until **after** power is removed.

Using power strips

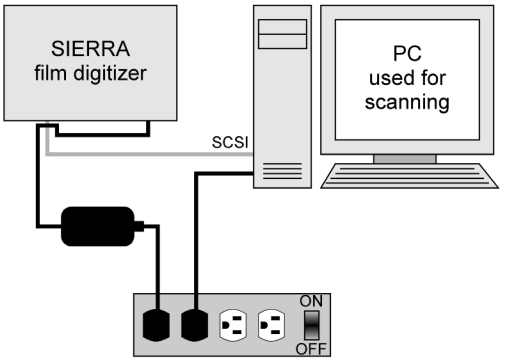
Power strips provide a convenient way to control power to computing components. However...

SCSI protocol requires that the digitizer be powered first and the PC powered second. This cannot happen if both digitizer and PC are connected to the same power strip, and you use the power strip's switch to turn the entire system on (as shown below, left).

If you want to use power strips, you must use separate power strips for digitizer and PC (as shown below, right). This enables you to turn on the digitizer and PC using the proper sequence:

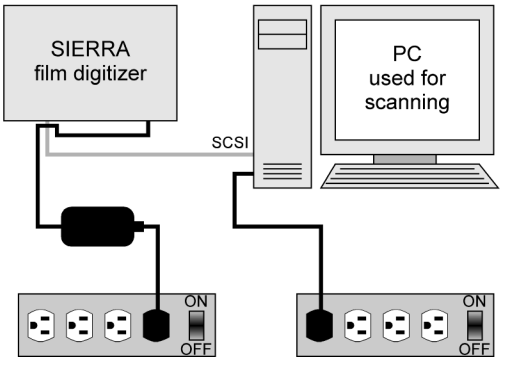
1. Turn on the digitizer.
2. Wait for the digitizer's LED to turn solid green.
3. Turn on the PC.

Do not *control system power from one power strip*



System turned on and off using power strip

Instead, *control components from two power strips*



Turn digitizer on **FIRST**

When digitizer LED is solid green, then turn on PC